

Sub 1/2  
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2. (Amended) [Process] A process for qualitative and/or quantitative detection of analytes in heterogenous immunoassays [or other binding assays, wherein, at the time of measurement,] comprising measuring remanent magnetization of bound magnetic markers in [their totality produce a remanent magnetization of the] a sample, [while] wherein at the time of measurement the magnetization of unbound magnetic markers that are present in the sample in their totality fades owing to extrinsic superparamagnetism.

Sub 3  
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3. (Amended) [Process] A process for qualitative and/or quantitative detection of analytes in a liquid and solid phase[s, wherein] heterogenous immunoassay, comprising

- (i) labeling first structure-specific substances, [are labeled] with ferrimagnetic or ferromagnetic substances, [and then]
- (ii) adding said [these] magnetic labeled structure-specific substances [are used in] to a sample that is to be measured,
- (iii) magnetizing the sample to be measured [is magnetized] with the aid of a magnetic field or suitable intensity that is applied from [the] outside and,
- (iv) [after the external field is shut off,] measuring the remanence of the magnetization of [the colloidal particles is measured] bound structure-specific substances with the aid of magnetic field sensors after the external field is shut off, whereby the remanence that occurs due to specific binding and its extent are used for analysis].

**Claim 4 (Twice Amended)**

- line 1: Change "Process" to --A process--; delete "instead of".
- line 2: Delete "the structure-specific substances,".
- line 4: Delete "the" (second occurrence).

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5. (Twice Amended) [Process] A process according to claim 1, wherein the structure-specific substances are antibodies, antibody fragments, biotin, [or] substances that bind specifically to biotin [such as avidin or streptavidin], agonists that bind specifically to receptors or their antagonists, [specific] peptides, [and] proteins, receptors, enzymes, enzyme

Sub & cont } substrates, nucleotides, ribonucleic acids, deoxyribonucleic acids, carbohydrates, or lipoproteins.

**Claim 6 (Twice Amended)**

line 1: Change "Process" to --A process--.

**Claim 7 (Twice Amended)**

line 1: Change "Process" to --A process--.

**Claim 8 (Twice Amended)**

line 1: Change "Process" to --A process--.

line 2: Delete "thus the" and insert therefore --a--.

**9. (Twice Amended)** [Process] The process according to claim 1, wherein induction coils that are hooked up as gradiometers, fluxgate-magnetometers, giant magnetoresistance sensors, or magnetoresistive converters are used as magnetic field sensors to determine remanent magnetization.

**10. (Twice Amended)** [Process] The process according to claim 1, wherein SQUIDS are used as magnetic field sensors to determine remanent magnetization.

**Claim 11, line 1:** Change "Process" to --A process--.

line 3: Change "step-by-step" to --sequential--.

line 4: Change "the" to --a--.

**Claim 12, line 1:** Change "Process" to --A process--.

**13. (Twice Amended)** [Process] The process according to claim 1, wherein [the intrinsic Neelian relaxation times of] the ferromagnetic and ferrimagnetic substances [that are] used [are] have intrinsic Neelian relaxation times greater than the measuring time.

14. (Amended) [Process] The process according to claim 13, wherein [the Neelian relaxation times of] the ferromagnetic and ferrimagnetic substances that are used [are] have Neelian relaxation times longer than  $10^{-4}$  seconds at 20°C.

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cond  
15. (Amended) [Process] The process according to claim 13, wherein [the Neelian relaxation times of] the ferromagnetic and ferrimagnetic substances that are used [are] have Neelian relaxation times longer than 1 second at 20°C.

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**Claim 16 (Twice Amended)**

~~line 1:~~ Change "Process" to --A process--.

~~line 3:~~ Delete "in the range".

**Claim 17 (Twice Amended)**

~~line 1:~~ Change "Process" to --A process--.

~~line 3:~~ Delete "in the range".

**Claim 18 (Twice Amended)**

~~line 1:~~ Change "Process" to --A process--.

~~line 3:~~ Delete "that is made".

/ Cancel claims 19-21 without prejudice or disclaimer.

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C6  
22. (Amended) [Compound] The process according to claim [19] 3, wherein the structure-specific substances are [antibodies, antibody fragments, agonists that bind specifically to receptors,] cytokines, lymphokines, endothelins or their antagonists[, other specific peptides and proteins, receptors, enzymes, enzyme substrates, nucleotides, ribonucleic acids, deoxyribonucleic acids, carbohydrates, or lioproteins].

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**Claim 23 (Twice Amended)**

~~line 1:~~ Change "Compound for use in the" to --The--.

~~line 5:~~ Change "as well as" to --or--.

24. (Twice Amended) [Agents for use in the] The process according to claim 11;  
wherein [they contain] several ferromagnetic or ferrimagnetic substances with various coercive  
field intensities are used.

25. (Twice Amended) [Use of the processes according to claim 1 in] In a  
fertility, histocompatibility, allergology, infectiology, hygiene, genetics, virology,  
bacteriology, toxicology, pathology, environmental analysis, or medical diagnosis process  
comprising detecting an analyte, the improvement wherein the detecting is performed  
according to claim 1.

C7 26. (Amended) [Process for the detection of] A process according to claim 1,  
wherein ferromagnetic or ferrimagnetic substances [that] are introduced into the human body  
or [that] are applied on the human body, [wherein] and the remanence of the magnetization of  
the ferromagnetic or ferrimagnetic substances is determined after a magnetizing field is shut  
off.

27. (Amended) [Process for the detection of] A process according to claim 3,  
wherein ferromagnetic or ferrimagnetic substances [that] are introduced into [the human body]  
an organism or applied on the [human body, characterized in that first] organism, by a process  
comprising

- (i) labeling structure-specific substances [are labeled] with ferrimagnetic or  
ferromagnetic substances, [and then]
- (ii) [these] adding said magnetic labeled structure-specific substances [are  
introduced into the] to a living organism or applied to [the] an organism,
- (iii) [an advantageous] magnetizing a volume of the organism [is magnetized] with  
the aid of a magnetic field that is applied from the outside and,
- (iv) [after the external field is shut off, the] measuring remanence [of the  
magnetization] of the magnetic markers [is measured] with the aid of magnetic  
field sensors after the external field is shut off.
- Spelling

Claim 28, line 1: Change "Process" to --A process--.  
line 3: Delete "specific"; After "peptides" insert -- , --; delete "and".

Claim 29, line 1: Change "Process" to --The process--.

Claim 30, line 1: Change "Process" to --The process--.

Claim 31, line 1: Change "Process" to --The process--.

Claim 32, line 1: Change "Process" to --The process--.

Cancel claims 33 and 34 without prejudice or disclaimer.

35. (Twice Amended) [Agents for use in processes] The process according to claim 27, wherein [they contain] a mixture of different ferrimagnetic or ferromagnetic substances with structure-specific substances issued.

Claim 36 (Twice Amended)

line 1: Change "Compounds for use in processes" to --The process--.

Claim 37 (Twice Amended)

line 1: Change "Compounds for use in processes" to --The process--.

Claim 38 (Twice Amended)

line 1: Change "Compounds" to --The process--.

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39 (Amended) A process according to claim 1, wherein the ferromagnetic or ferrimagnetic substance is magnetic-labeled anticollagen II and SQUID(s) are used to determine remanent magnetization.